

ABSTRACT OF THE INVENTION

A system and method of controlling the spectrum of an orthogonal frequency division multiplexing (OFDM) signal. The method comprises receiving an input frame of data samples to be modulated onto orthogonal multi-carrier signals, performing frequency domain filtering and spectrum masking on the input frame of data samples, and modulating the respective frequency modified data samples onto a plurality of carriers. Such a system may include an over sampling logic to over sample the input data to increase the frequency resolution of the output spectrum, a wave shaping filter to perform frequency domain filtering of the input data, a spectrum mask to further modify the spectrum of the output signal, and an inverse fast Fourier transform (IFFT) to generate the modulated orthogonal multi-carrier signal. Another embodiment entails controlling the spectrum of the output OFDM signal by performing time-domain filtering.